REMARKS

Claims 1, 2, 4, 8-20 and 22 are pending in this application. By this Amendment, claims 1, 9, 19 and 20 are amended and claim 22 added. Claims 3 and 5-7 are canceled without prejudice to, or disclaimer of, the subject matter in those claims. Claim 1 is supported, for example, by original claims 3 and 5-7, paragraphs [0016] - [0018], [0020] and [0065], and Table 1, Examples 3-8. Claims 19 and 20 are supported, for example, by paragraph [0060], and Examples 45 and 56. Claim 22 is supported, for example, by paragraphs [0024] and [0067]. No new matter is added. Reconsideration in light of the amendments and the following remarks is respectfully requested.

In the Office Action, claims 1-8 (presumably only claims 1-6 and 8) are rejected under 35 U.S.C. §102(b) over U.S. Patent No. 6,541,407 to Beall and claim 7 is rejected under 35 U.S.C. §103(a) over Beall. These rejections are respectfully traversed.

Independent claim 1 is amended to recite that: (1) the porous powders have a bulk density of 0.2 to 1g/cm^3; (2) the ceramic clay is in an amount of 5-40% of the total amount of the forming raw material so as to make the porous powder work sufficiently as a pore-forming material and at least part of an Si-source for forming cordierite in the ceramic clay; (3) the formed clay converts a material of the clay to cordierite; and (4) the partition walls have a porosity of at least 50%.

Beall teaches not to use an organic pore-forming material (col. 8, lines 24-30). The porosity of the products obtained by Beall is shown in Table D on col. 7 to have a pore volume of about 42% at most. Although Beall states generally that porosity should be at least 38%, more preferably at least 42%, and still more preferably 47% by volume (col. 4, lines 25-26), there is no teaching of how to obtain even 47%, and clearly no teaching of at least 50% porosity.

Applicants' specification, such as on paragraphs [0016] - [0018] and the various Tables recognize a criticality to use of silica or silica-containing compound powders in a volume amount of 5 to 40 vol.% and a bulk density of 0.2 to 1g/cm^3 to achieve a desired porosity of at least 50%, as claimed.

Beall is silent as to the criticality of a bulk density of silica to be used as a material for a cordierite forming material when silica is used as a pore-forming agent in addition to at least part of the cordierite forming material. Therefore, one of ordinary skill in the art would not have been led to use silica having a bulk density of 0.2 to 1g/cm^3 as at least part of cordierite forming material to achieve a porosity of at least 50%, as claimed, from the teachings of Beall. For example, if silica having a bulk density of over 1 g/cm^3 is used solely, as demonstrated in Applicants' comparative Example 1 in Table 1, the resultant porosity is at most 45%. Thus, Beall fails to recognize the effect that bulk density has on porosity.

Beall is also silent as to the criticality of the use of 5-40 vol.% of the silica or silica-containing compound powder in the total amount of raw forming material as it relates to creation of a desired porosity. In fact, although claim 7 is allegedly rejected under §102(b) based on Beall, there is no rationale provided at all for rejection of this claim. Instead, in connection with the rejection of claim 7 under §103(a) based on Beall, the Office Action admits that "Beall is silent as to the proportion of silica used in the creation of the honeycomb body" (Office Action, bottom of pg. 5). It is further alleged that the amount to be used can be selected, taking into consideration of the amount to be required to make the clay convert to cordierite. However, no honeycomb body having a porosity of 50% or more by volume is obtained when, for example, silica having a bulk density of 2.6 g/cm^3 is used, as illustrated in Applicants' comparative Example 1 in Table 1, which only achieves a porosity of 45%.

That is, one of ordinary skill in the art would not have been led to combine prior elements according to known methods to yield predictable results so as to achieve a desired porosity of at least 50%, as claimed, from the teachings of Beall.

With respect to dependent claims 5-6 (features now incorporated into independent claim 1), the Office Action refers to evidentiary documents, which entail MSDS information, alleging that dry diatomaceous silica is in the range of 9.5-13 lbs/ft^3, which is alleged to inherently possess a bulk density within .2 to 1g/cm^3. However, the example cited by the Office Action is directed to silica containing 5-7% aluminum fluoride in addition to silica. This document does not support the bulk density data of the silica itself, or provide any indication that such a product may be useable for forming a honeycomb body. See, for example, Applicants' paragraphs [0024] and [0025] (and new claim 22) where it has been found that Si content of 95-99.99 mol% has been found to achieve desired porosity, while higher content of remaining components may cause a shrinkage of the pore forming agent to a large extent upon firing. Moreover, there is no showing that the use of this particular product would have had predictable results. The mere fact that references or compounds could have been combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art.

Furthermore, the Office Action cites a technical document concerning diatomaceous earth. This merely teaches that the upper limit of specific gravity of diatomaceous earth is 2. There is no teaching of the criticality of the bulk density of silica, to be used as a pore forming agent (in the absence of a resin foam) to achieve a desired porosity of at least 50%, of .2 to 1 g/cm^3 as claimed, in combination with the total volume percent of clay relative to the total amount of forming raw material.

Accordingly, Beall fails to teach, or provide a rationale for, the specific combination of features recited in independent claim 1 and the resultant combination would not have lead

one of ordinary skill in the art to predictably achieve a desired porosity of at least 50%. Accordingly, claim 1, and claims dependent therefrom, distinguish over Beall.

Withdrawal of the rejections is respectfully requested.

In the Office Action, claims 1, 4-6 and 8-20 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,264,200 to Felthouse in view of U.S. Patent No. 3,203,760 to Winyall. This rejection is respectfully traversed.

As admitted in the Office Action on pgs. 10-11, the combination of Felthouse and Winyall fails to form cordierite, and the formation of cordierite would distinguish over the applied combination. Because independent claim 1 incorporates features of canceled claim 3 and recites formation of a cordierite in the ceramic clay, independent claim 1, and claims dependent therefrom, distinguish over Felthouse and Winyall.

Regarding previously independent claims 9, 19 and 20, these claims are revised to depend from claim 1. Therefore, these claims are allowable for their dependence on allowable base claim 1, as well as for the additional features each recites.

Withdrawal of the rejection is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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Attachment:
Petition for Extension of Time

Date: October 13, 2009

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